

Pollution Prevention Annual Report 1999

December 1, 1999

Submitted to:

**The Honorable James S. Gilmore, III
Governor**

**The Honorable Madison E. Marye, Chair
Senate Agriculture, Conservation and Natural
Resources Committee**

**The Honorable A. Victor Thomas, Co-Chair
The Honorable Raymond R. Guest, Co-Chair
House Conservation and Natural Resources
Committee**

By:

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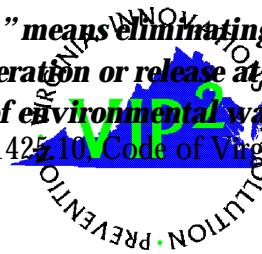
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Introduction

In 1993, the Virginia General Assembly adopted legislation which established a policy to promote source reduction (or “pollution prevention”) over other environmental management techniques such as control, treatment and disposal. The United States Congress adopted a similar policy preference with the passage of the Pollution Prevention Act of 1990. The Virginia law requires the Department of Environmental Quality (DEQ) to establish a pollution prevention technical assistance program and to report annually to the Governor and the General Assembly on its activities. This report summarizes DEQ’s pollution prevention efforts during 1999.

“Pollution prevention” means eliminating or reducing the use, generation or release at the source of environmental waste.

§10.1-1425.10, Code of Virginia



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Virginia Innovations in Pollution Prevention (VIP2)

In April, 1999, Secretary of Natural Resources John Paul Woodley, Jr., formally announced the “Virginia Innovations in Pollution Prevention” or VIP2 initiative. Based on the premise that the target for the next century must be to go “beyond compliance” with environmental regulations and move toward a sustainable economy of cleaner, more efficient technologies and operations, VIP2 consists of seven components designed to significantly expand the level of pollution prevention activity within the public and private sectors, including the following:

- < **Environmental excellence program**, which recognizes true environmental leadership in environmental management systems and environmental performance for industry, government and other organizations;
- < **Mentoring**, a business-to-business mentoring network for pollution prevention, environmental management systems, and compliance;
- < **Environmental technology**;
- < **Financial incentives** for pollution prevention and innovative technology investments;
- < **Integration of opportunities for voluntary pollution prevention** into environmental programs;
- < **Expanded technical assistance services** for pollution prevention and environmental management systems for Virginia facilities; and,
- < **Environmental education** activities developed to integrate pollution prevention and innovative technology into Virginia school programs and general public outreach.

DEQ is moving forward with the implementation of VIP2 and is also promoting Governor Gilmore’s long-term, voluntary goal of “zero discharge” to the environment. Several workgroups consisting of stakeholders from industry, government, assistance organizations and citizen groups were created to recommend implementation strategies to DEQ. As of October, 1999, implementation of each of the seven components was as follows:

- < **Environmental Excellence Program**: A workgroup was formed in late 1998 to develop recommendations on an environmental excellence program for Virginia to provide incentives for organizations to implement environmental management systems and pollution prevention initiatives. The workgroup has representatives of government, industry, business and citizen groups. A number of other state environmental excellence

programs were reviewed by the workgroup, including those in Oregon, Michigan, South Carolina, New Mexico, Texas, Washington and Georgia.

In late September, the workgroup recommended a two-tier framework for the environmental excellence program to the Virginia Pollution Prevention Advisory Committee. The first tier (E2: Environmental Enterprise) would be for those organizations that are in the initial stages of developing an environmental management system. Incentives for participation include recognition and technical assistance. The second tier (E3: Exemplary Environmental Enterprise) would be for those organizations that have implemented a more advanced environmental management system, approaching the level of ISO 14001. Incentives for participation in the second tier include recognition, technical assistance and possible regulatory flexibility.

- < **Mentoring:** Under VIP2, a mentor is an individual or company that has voluntarily committed to provide pollution prevention, environmental management systems or compliance-related technical assistance. Mentoring usually targets small businesses and other organizations lacking the resources to hire environmental staff or consultants.

A workgroup consisting of representatives of business and industry was formed in early 1999 to develop recommendations on an environmental mentor program for Virginia. One of the chief considerations is making sure that existing programs, such as the Businesses for the Bay and the Small Business Enviromentor program under development, can continue as unique programs. The workgroup recommended a web-based mentoring network to the Virginia Pollution Prevention Advisory Committee in late September. In addition, the workgroup developed a number of recommendations on marketing the program.

- < **Environmental Technology:** To facilitate the acceptance of new environmental technologies and to reduce the risk of improper use, in late 1999 DEQ created an Environmental Technology Advisory Group (ETAG) to conduct peer reviews of new technologies. DEQ hired a new staff person to provide support to the ETAG, to track environmental technology verification efforts underway in other states, and to identify regulatory and perceptual barriers to new and emerging technologies as well as existing technologies.
- < **Financial Incentives:** Often, lack of available funding to support proactive changes such as the purchase of new equipment or the redesigning of a process represents a significant barrier to the implementation of pollution prevention and innovative technology. Under VIP2, several financial incentives will be made readily available to Virginia businesses. A new program that will offer low-interest loans to small businesses seeking to purchase pollution prevention equipment and air pollution control equipment called the Small Business Compliance Assistance Loan Fund is expected to be available in January, 2000.
- < **Integration of Opportunities for Voluntary Pollution Prevention:** DEQ has begun a systematic review of its programs and procedures to identify opportunities for integrating voluntary pollution prevention initiatives. The review will result in pilot projects that will test when and if pollution prevention is appropriate within various

programs. Potential projects include the Title V air permitting program and the Total Maximum Daily Load (TMDL) program, among others. DEQ will also provide pollution prevention training to agency staff highlighting the successful integration of pollution prevention into other state core regulatory programs (e.g., permitting, inspections and enforcement). See “Integration of Pollution Prevention into DEQ Programs” on page 16 for more details.

- < **Expanded Technical Assistance Services:** Under VIP2, the services available to Virginians through the Division of Pollution Prevention and Compliance Assistance will significantly expand. New areas of focus planned include outreach to state and local government facilities and environmental management systems planning. Current outreach functions such as on-site pollution prevention technical assessments, compliance assistance and training will also be expanded.

In the fall of 1999, the Office of Pollution Prevention filled seven new positions, a significant increase from the previous level of three full-time and three part-time positions. Three of the new positions will be physically located at DEQ regional offices, making them closer to facilities requesting assistance.

- < **Environmental Education:** DEQ’s environmental education program is expanding its efforts to incorporate themes of pollution prevention and innovative technology into all appropriate outreach materials for citizens, students and educators. An environmental education workgroup of educators, industry and citizen groups will be formed in late 1999 to advise DEQ. See “Environmental Education” on page 17 for more details.

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Outreach Services

The Office of Pollution Prevention (OPP) provides a number of outreach services, ranging from general pollution prevention information contained in the program newsletter to industry-specific workshops to pollution prevention opportunity assessments at individual facilities. To increase access to its resources, OPP has continued to post information, including factsheets and newsletters on its Internet web site (www.deq.state.va/p2). In 1999, OPP also participated in three major conferences focused on the themes of sustainability.

Presentations and Events

OPP staff respond to requests for presentations and initiate events to promote pollution prevention. In 1999, OPP staff made over 60 presentations to a total audience of over 2,100. Topics included an overview of program services as well as specific pollution prevention initiatives such as Businesses for the Bay and state agency pollution prevention planning. A day-long workshop on pollution prevention for vehicle maintenance was presented to 70 participants in July. In addition, OPP exhibited information at 5 events in 1999, with an estimated audience of over 1,200.

Virginia's Sustainable Future Conference

On June 16-18, OPP was a co-sponsor of the first "Virginia's Sustainable Future" conference in Richmond in cooperation with the Virginia Housing and the Environment Network, the Virginia Housing Development Authority, DEQ's Coastal Resources Management Program and numerous other sponsors. The conference planning committee set three goals: (1) attract 300 attendees from a diverse mixture of public, private and community representatives; 2) bring nationally known and Virginia-based speakers to educate and inform about the concepts and practices of sustainable development, green building, innovative technology and industrial stewardship; and (3) promote state-wide exchange of ideas, policy formulation and activities that support sustainability. The conference was very successful, with over 470 participants, speakers and exhibitors attending the event. The attendees and exhibitors at the conference were diverse, with participants ranging from representatives of environmental groups, federal, state and local governments, and the business community, including manufacturers and construction



firms. The planning committee is working to promote a follow-up series of regional forums focused on the issue of sustainability to be held throughout the Commonwealth.

Pollution Prevention Virginia Newsletter

In 1999, OPP published two issues of its program newsletter, *Pollution Prevention Virginia*, which features pollution prevention activities in Virginia. Each issue of the newsletter highlights OPP program initiatives, successful industrial pollution prevention programs, innovative products, OPP partner assistance programs, training/funding opportunities and resources such as useful Internet sites. Articles and features are written by OPP staff, as well as DEQ regional staff and industry representatives. The newsletter is mailed to over 5,800 representatives of business and industry, government, citizen groups and other individuals. Copies of the newsletters are now available through DEQ's website, and OPP hopes to begin using electronic mail to distribute the newsletter in the near future.

The Summer 1999 issue featured the announcement of the Virginia Innovations in Pollution Prevention (VIP2) program by Secretary of Natural Resources John Paul Woodley. Additional articles featured:

- < "The PBT Story", written by EPA Region III staff, which explained EPA's efforts to minimize the generation of wastes that contain persistent, bioaccumulative and toxic chemicals;
- < A summary of the Virginia's Sustainable Future conference, which was co-sponsored by OPP in June;
- < National Pollution Prevention Week activities sponsored by OPP;
- < Businesses for the Bay mentoring activities and pollution prevention initiatives at two Businesses for the Bay member facilities, O'Sullivan Corporation in Winchester and the Ford Assembly Plant in Norfolk;
- < Virginia's State Agency Pollution Prevention Planning Initiative and recent successes; and,
- < Environmental education efforts and training opportunities.



Pollution Prevention Opportunity Assessments

Pollution prevention opportunity assessments provided by OPP technical staff offer information and advice to Virginia facilities. The opportunity assessment is intended to identify options that eliminate environmental problems at their source. Ideally, the assessment will identify opportunities to reduce the facility's impact on the environment, reduce costs, and improve the work environment. The OPP technical staff visited forty

facilities during 1999. Several different categories of pollution prevention opportunity assessments were conducted: joint visits with other agencies/programs; joint facility visits with DEQ hazardous waste inspectors; visits to facilities receiving grants in 1998 from DEQ for pollution prevention projects; and visits to Virginia state agencies.

Joint Pollution Prevention Visits with Other Agencies/Programs: Within Virginia, there are a number of non-profit or university-based pollution prevention outreach programs available to facilities. OPP partners with these organizations to maximize the impact of the facility visit.

- < DEQ Pollution Prevention Visits with EPA Region III Waste Minimization Staff: Four facilities were visited, including Siemens Automotive in Newport News, which won the 1999 Governor's Environmental Excellence Award for their pollution prevention accomplishments. The Stanley Hardware Division facility located in Henrico County was also visited by the joint team. In September, 1999, Stanley was awarded the first ever "PBT Cup" by EPA Headquarters for its significant minimization of a persistent, bioaccumulative and toxic waste stream.
- < DEQ Pollution Prevention Visits with Elizabeth River Project: Three pollution prevention assessments were conducted in the Norfolk area in cooperation with the Elizabeth River Project pollution prevention team. One ship repair company that was visited has installed a totally enclosed high-pressure water system for paint removal on ship hulls, which eliminates all discharges of toxic materials into the environment.
- < DEQ Pollution Prevention Visits with Universities: Two pollution prevention assessments were also conducted jointly with state universities. Old Dominion University Technical Assessment Team and OPP staff visited a tobacco manufacturing plant in Chesterfield to conduct a combined energy and pollution prevention assessment. OPP worked with a Virginia Tech graduate student at a large cabinet manufacturer in Charles City County to reduce their solid waste and to find ways to recycle their waste fiberboard.
- < EPA's Strategic Goals Partnership Voluntary Program for Metal Finishers: OPP staff attended the first meeting held in Virginia on EPA's Strategic Goals Partnership for metal finishers in August. The Strategic Goals Partnership establishes a set of voluntary performance goals for the metal finishing industry. Fifteen companies from the Tidewater region attended the initial meeting, and follow-up meetings are planned for other areas within the Commonwealth. OPP is working with EPA's Region III Waste Minimization Team to promote the program throughout the state.

DEQ Pollution Prevention Facility Visits with DEQ Hazardous Waste Inspectors: Continuing its policy of integrating pollution prevention into DEQ's regulatory programs, in 1999 DEQ staff conducted eight joint inspections with DEQ's compliance inspectors. Several companies were revisited to determine if they had implemented pollution prevention suggestions made in previous visits:

- < A glass manufacturer in southwest Virginia has successfully modified their process to enable them to reuse 20,000 gallons per day of their process water and to achieve their goal of zero discharge of industrial effluent.
- < Two metal finishing companies have reduced the amounts of hazardous waste being sent off-site for treatment by over 80% by installing evaporators to handle non-hazardous waste streams that previously had been combined with their hazardous wastes.

Visits to Facilities Receiving 1998 Pollution Prevention Grants from DEQ: Pollution prevention site visits were also made to five companies completing their project work which was partially funded by the 1998 Pollution Prevention Grants awarded by DEQ and other partner organizations:

- < A plastics manufacturer in southwestern Virginia successfully eliminated the solvents used in their cleaning operations, saving \$70,000 annually by switching to a closed-loop aqueous cleaning system
- < A manufacturer of railroad bearings in Petersburg was able to reduce the amount of waste oil by 25,000 gallons annually by installing instrumentation which allows them to monitor the processes generating the waste oils to detect and correct any abnormal variances.
- < A metal plater in Williamsburg is currently doing the final evaluation of a chromate regeneration system on their production lines.
- < A printer in Richmond switched to air-cooled vacuum pumps which eliminated their use of non-contact cooling water (over five million gallons annually), saving \$30,000.
- < A wire manufacturer in Fredericksburg will be installing an ion-exchange unit which will allow them to reuse their process water and reduce their water use by 85%. The new system will have a one-year payback period.

Visits to Virginia State Agencies: Pollution prevention opportunity assessments were conducted at three state agency facilities: Virginia State University and the Department of Game and Inland Fisheries' Chickahominy Wildlife Management Area and Vick Thomas Hatchery. See page 11 for more information on OPP's state agency pollution prevention initiative.

Environmental Management Systems Facility Visits: OPP staff visited two manufacturers that are certified in the ISO 14001 environmental management system (EMS) to discuss how pollution prevention was incorporated into their EMS. Staff also attended a

workshop sponsored by the North Carolina Department of Environment and Natural Resources entitled "EMS Models and Strategies: ISO 14001 and Beyond. Gaining Competitive Advantage Through Environmental Management Systems."

Information Requests and Mailings

OPP regularly receives requests for pollution prevention information by phone, mail, fax and electronic mail. Most of these requests are for general pollution prevention information, but many of them require staff to research specific pollution issues. In the first 10 months of 1999, OPP staff answered more than 240 requests for information. Requests come from all areas of Virginia (11% southwest, 21% northern/valley and 48% Richmond/Tidewater). Forty-nine (20%) requests were received from out-of-state.

Electronic mail and the Internet have greatly changed the nature of information requests and mailings. In 1998, OPP refined its mailings by targeting industries and developing one-page fact sheets and success stories specific to that industry. During 1999, OPP staff developed additional success stories and made these and other publications available through the program web site. OPP staff are currently developing web pages for specific program elements and for individual industrial sectors.

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Initiatives and Programs

The Office of Pollution Prevention (OPP) facilitated a number of pollution prevention initiatives and programs in 1999. These include promoting Businesses for the Bay, the Virginia state agency pollution prevention planning initiative, integrating pollution prevention into DEQ's environmental programs, organizing National Pollution Prevention Week activities, strengthening partnerships with other technical assistance organizations and environmental education activities.

Businesses for the Bay

As of mid-October, 1999, 155 Virginia businesses and other organizations had joined Businesses for the Bay, a voluntary pollution prevention program designed to encourage industry, businesses and other organizations to adopt pollution prevention principles. In addition, more than 70 individuals have volunteered to serve as business-to-business mentors for pollution prevention. Sponsored by the EPA's Chesapeake Bay Program, Businesses for the Bay (B4B) program was designed in conjunction with the Chesapeake Bay Basinwide Toxics Reductions and Prevention Strategy. It has received national recognition for its environmental education and mentoring activities. The strategy was adopted as part of the 1987 Chesapeake Bay Agreement by the Chesapeake Bay Executive Council, which consists of the Governors of Virginia, Maryland, and Pennsylvania; the Mayor of the District of Columbia; the EPA Administrator; and the Chairman of the Chesapeake Bay Commission. The strategy recognizes pollution prevention as an important tool for improving conditions in the Bay. B4B is designed to reduce the impact of toxics on the watershed.



Each facility annually develops its own pollution prevention goals, which may range from reducing the volume of chemicals used at the facility to acting as a mentor and providing technical assistance to other businesses. Each year, participants are asked to report on their successes and to establish goals for the next year. Businesses for the Bay member facilities receive positive public recognition, access to mentoring and assistance and eligibility for annual awards presented by the Executive Council.

During 1999, OPP actively promoted B4B through a variety of approaches, including mailings to members, newsletter features, technical workshops, newspaper articles and

advertisements, meetings for mentors, one-on-one recruitment meetings, displays at conferences, and other presentations. Some of the highlights included:

- < A Businesses for the Bay “Small Business Roundtable” co-hosted with the Elizabeth River Project in Norfolk on January 22;
- < First meeting of the Virginia Businesses for the Bay Marketing Subcommittee in Richmond on January 26;
- < Pollution prevention successes of Businesses for the Bay member facilities and a list of a participating facilities were included in the Richmond Times-Dispatch advertorial section for Governor Gilmore’s “Operation Spruce-Up” campaign on March 24;
- < Businesses for the Bay co-sponsored a technical workshop for printers on the Eastern Shore on April 19;
- < Businesses for the Bay mentor meeting was held in coordination with the Virginia’s Sustainable Future conference in Richmond on June 16;
- < Businesses for the Bay co-sponsored a technical workshop for automotive fleet maintenance managers at John Tyler Community College in Chester on July 30;
- < Pollution prevention successes of Businesses for the Bay member facilities were featured in the Richmond Times-Dispatch advertorial section for Governor Gilmore’s “Fall River Renaissance” campaign on September 16; and,
- < An advertisement appeared in the September 27 issue of the Richmond Times-Dispatch business section listing all of Virginia’s Businesses for the Bay mentors.

Businesses for the Bay members are asked to report on their progress towards meeting their annual goals. Listed below are some of the quantifiable achievements reported by approximately twenty-five Virginia members. These numbers represent only a percentage of actual achievements by program participants because not all members submitted reports.

- < Number Reporting Preventive Maintenance Activities: 4
- < Number Reporting Pollution Prevention Opportunity Assessments: 14
- < Employees Receiving Pollution Prevention Training: 2,257

< Waste Reduced or Recycled	<u>Pounds Reduced</u>	<u>Dollars Saved</u>
OSource Reduction:		
+ Process Changes	= 2,958,943	\$233,692
+ Procurement	= 85,800	0
+ Substitutions	= <u>55,000</u>	<u>0</u>
Total	= 3,099,743	\$233,692
ORecycling:		
+ Closed-Loop Recycling	= 25,703,105	\$195,112
+ Non-Closed Loop Recycling	= <u>22,243,317</u>	<u>438,810</u>
Total	= 47,945,422	\$633,922
Total Waste Reduced or Recycled	= 51,046,165 pounds	
Total Savings Reported	= \$867,614	

State Agency Pollution Prevention Planning

The Virginia General Assembly adopted House Joint Resolution 453 in 1995. It requested certain agencies of the Commonwealth to engage in pollution prevention planning. As the Commonwealth's lead agency for pollution prevention efforts, DEQ was requested by the resolution to establish criteria to determine which agencies were affected, develop pollution prevention planning guidance, and establish a timetable for plan development and implementation.

In 1995, DEQ established a protocol to meet its responsibilities related to HJR 453. Any Virginia state agency that was subject to an environmental reporting requirement or required to obtain an environmental permit was considered part of the pollution prevention initiative. This resulted in twenty-four state agencies becoming involved in the initiative, primarily those that maintain facilities, such as universities, prisons and hospitals. DEQ adopted standard pollution prevention planning guidance developed by the EPA and offered technical assistance such as training, on-site assessments and research. Finally, a three-year implementation schedule was established (year one: training; year two: plan development; year three: plan implementation), with plans submitted to OPP for review in mid-1997.

Many of the state agencies involved in the initiative have made significant progress in reducing their wastes. A number had well-established pollution prevention programs in place prior to the 1995 General Assembly resolution. Those actively promoting pollution prevention throughout their operations have achieved significant reductions in both the toxicity and amount of waste they generate as well as substantial cost savings from avoided materials handling, management and disposal costs.

Highlights of the state agency pollution prevention initiative from 1999 include:

- < After receiving a special grant from the Environmental Protection Agency in late 1998, OPP hired a State Agency Pollution Prevention Coordinator in February, 1999. Three categories of outreach are included in the project: training/ presentations; pollution prevention plan development, assistance and review; and on-site pollution prevention opportunity assessments.
- < A workshop entitled "Pollution Prevention for Automotive Fleet Managers" was held at John Tyler Community College in Chester in July. This free, one-day seminar provided information on pollution prevention, recycling and environmental compliance for fleet maintenance operations. Over seventy fleet maintenance personnel from various state agencies attended the training, which was co-sponsored by OPP, the Partnership for Environmental Technology and Education, Businesses for the Bay, U.S. EPA's Design for the Environment program and John Tyler Community College.
- < The availability of pollution prevention information to state agencies and the exchange of related information between agencies has been increased. OPP developed a bi-monthly electronic newsletter for state agency pollution prevention contacts. It includes information about state and federal government pollution prevention initiatives, pollution prevention internet resources, environmental issues in Virginia and pollution prevention related activities pertinent to state agencies.
- < OPP is presently working with the Department of General Services (DGS) to integrate pollution prevention into the state procurement system. A contact list of state agency procurement personnel will be compiled and targeted as recipients of environmentally preferable purchasing information. OPP is also working with the Virginia Distribution Center to have more environmentally preferable products available to state agencies and has a representative on the newly created Environmentally-Friendly Purchasing Committee of DGS's Division of Purchasing and Supply. Environmentally preferable purchasing information is also being distributed through forums aimed at government purchasers. OPP had an exhibit at the Virginia Association of Government Purchasers exposition in April. In late 1999, OPP, in conjunction with DGS, will present a workshop at the 1999 Virginia Procurement Forum on "Green Purchasing".
- < Quarterly meetings of all state agency pollution prevention contacts have been coordinated by OPP. These meetings provide an opportunity for DEQ and other agencies to update their peers on pollution prevention initiatives and for networking opportunities.
- < Pollution prevention outreach to state agencies continues in the form of on-site pollution prevention opportunity assessments, pollution prevention training and seminars, technical support and compliance assistance. For example, two different facilities of the Department of Game and Inland Fisheries (DGIF) were assessed during 1999 for their pollution prevention opportunities. OPP made a number of suggestions, including raising public awareness of pollution prevention through the posting of signs

at public access sites to promote proper waste handling practices for the public using the facilities, standardizing pollution prevention practices at all agency facilities, using sludge available from a nearby wastewater treatment facility at no cost as a soil enhancer, revising handling procedures for scrap material on-site, and establishing quality assurance protocols to ensure the efficacy of automated machinery. Information and suggestions resulting from the assessments are being incorporated into DGIF's pollution prevention plan.

Virginia State University was also visited by OPP staff. Suggestions resulting from the assessment included increasing the use of electronic mail and other paper reduction techniques, communicating the university pollution prevention policy to staff through training, and establishing baseline data for inputs and waste streams.

- < OPP continued to support the State Agency Materials and Products Listing/Exchange (SAMPLE) to facilitate the exchange of usable hazardous materials among state agencies. The inability to surplus usable materials that are considered "hazardous", such as laboratory chemicals, cleaning products, solvents, paint, pesticides, and photographic chemicals, was identified by state agencies as a barrier to pollution prevention. In many cases, agencies pay to have these materials, which are still usable product, disposed of as hazardous waste, a costly option.

SAMPLE is accessible through DEQ's website. SAMPLE does not include hazardous wastes or items that are considered surplus property (such as furniture, vehicles, etc.). State agencies using the exchange are responsible for contacting the listing agency and arranging for pickup (and payment if required). The acquiring agency assumes responsibility for disposal of unused, unusable, spent or waste products. Products included on the list are to be used only for their originally intended purpose, and in compliance with all applicable federal, state and local laws.

Integration of Pollution Prevention into DEQ Programs

One of the seven components of the Virginia Innovations in Pollution Prevention (VIP2) initiative is the integration of the pollution prevention philosophy into the core regulatory and administrative functions of DEQ, including permitting, monitoring and compliance. As in other states, the limitations of the traditional command and control approach to environmental protection are being reached in Virginia. For instance, environmental regulations may define highly prescriptive compliance approaches, which may curtail innovation and pollution prevention alternatives. The regulations may also require significant capital investments for pollution control equipment, reducing incentives for additional investment in pollution prevention.

To begin the process of identifying specific programs and processes within DEQ's environmental programs that may provide pollution prevention opportunities, OPP has provided training and other assistance to DEQ regulatory staff for a number of years, which has heightened awareness of the benefits of pollution prevention and OPP services. In late

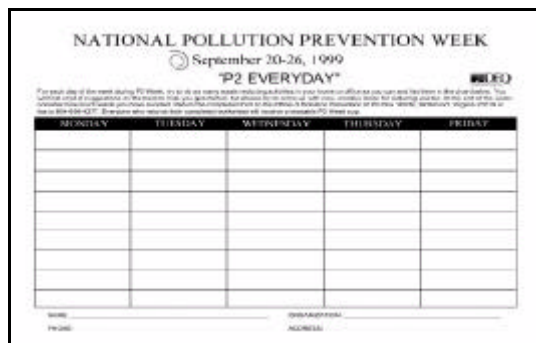
1998, OPP received a \$120,000 grant from EPA to fund a three-year comprehensive regulatory integration project. The goal of the project is to identify and implement pollution prevention pilot projects to test the effectiveness and appropriateness of pollution prevention approaches within DEQ's environmental programs. To assist with the project, DEQ hired a contractor in 1999. During the first (and current) phase of the project, teams of managers and staff will develop detailed workplans for pollution prevention integration pilot projects. Based on expected impact and staffing and budget considerations, five to ten pilot projects will be selected for implementation during the second phase of the project.

Outside of the formal regulatory integration project, pollution prevention was successfully included in a number of DEQ activities during 1999:

- < Joint Pollution Prevention/Compliance Facility Visits: Eight joint facility visits by OPP technical staff and DEQ hazardous waste compliance staff were conducted in 1999. OPP staff conduct a pollution prevention assessment during the compliance inspection to demonstrate various pollution prevention methods, including raw material substitution, process changes, inventory control and employee training. Facilities are given product information and vendor contacts and encouraged to further investigate their pollution prevention opportunities.
- < Environmental Impact Review: In 1998, OPP worked with DEQ's Office of Environmental Impact Review to integrate pollution prevention into DEQ's "Procedures for Environmental Impact Review" manual. This manual guides state agencies in the preparation and conduct of Environmental Impact Review (EIR) reports which are required for all significant state agency construction and acquisition projects. State agencies are now requested to consider pollution prevention techniques in their project planning and design and operations and to coordinate projects with their agency's pollution prevention plan, if one exists.

OPP began reviewing EIRs and providing comments to the Office of Environmental Impact Review in 1999. When pollution prevention concepts have not been considered in the EIR report, OPP provides recommendations, alternatives and information. The comments are included in the project review comments which are sent to the Governor's Office for final approval of the project. In addition to specific comments, OPP has also offered its services to the agencies involved in the review.
- < Pollution Prevention in DEQ Guidance Manuals: In July, OPP proposed the addition of language encouraging voluntary pollution prevention in the 1999 revisions to the Virginia State Air Operating Permit Manual. An informational flyer offering technical assistance to facilities and a six-page guidance document on pollution prevention within a facility were included in the manual. Similar information is being prepared for a water permitting manual expected to be completed in mid-2000.

National Pollution Prevention Week



For the third year, Virginia recognized National Pollution Prevention Week, which was celebrated in 1999 from September 20 through 26. Pollution Prevention Week was established several years ago as a time for business, government, and citizens to promote the benefits of pollution preventing activities. In support of National Pollution Prevention Week, Governor James S. Gilmore signed a “Certificate of Recognition”.

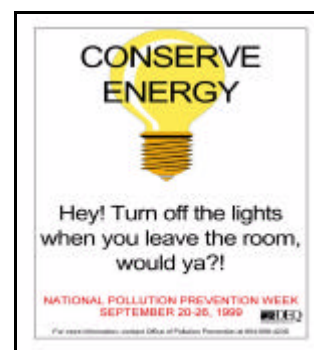
OPP supported National Pollution Prevention Week by challenging businesses, schools and other organizations to incorporate pollution prevention activities in their daily work

routine. OPP developed a series of posters, pollution prevention reminders and activities that were sent to various businesses, schools and DEQ regional offices to help promote awareness of National Pollution Prevention Week and pollution prevention in general. Daily electronic messages with helpful pollution prevention tips were sent to all DEQ employees as well as others around Virginia who requested the information to forward to their employees and students. A display was set up in the lobby of DEQ’s Central Office as well as the regional offices. A brown-bag lunch was scheduled to familiarize DEQ employees with the services and programs of OPP.

Other activities for this year’s National Pollution Prevention Week included a repeat of last year’s popular “P2 Everyday” activity which asks people to document their pollution prevention efforts throughout the week and return to OPP to receive prizes such as a reusable P2 Week cup. For the first time this year, OPP asked for volunteers to visit a school and talk to the students about National Pollution Prevention Week and what they can do to help prevent pollution. OPP provided pencils and stickers for these classroom visits as well as a modified version of the “P2 Everyday” activity. The Summer 1999 edition of OPP’s newsletter, *Pollution Prevention Virginia*, featured an article on National Pollution Prevention Week, and OPP developed a website where all of the posters and activities could be accessed by anyone interested in participating.

Pollution Prevention Partnerships

From its inception, partnerships and cooperative relationships with other organizations have been critical to the success of OPP. For instance, OPP staff are active participants in three state pollution prevention associations, the National Pollution Prevention Roundtable, the Region III Waste Minimization Team and the Region III Pollution Prevention Roundtable. Participation in the meetings and projects of these organizations allow Virginia to learn from other state and federal pollution prevention programs. In addition to these organizations, OPP is involved in a



number of partnerships within Virginia that provide opportunities for joint projects and valuable feedback. These include:

- < **Virginia Pollution Prevention Advisory Committee**, a 25-member panel that consists of representatives from industry, education, environmental and public interest groups as well as state, federal and local governments. In 1999, the advisory committee met three times (on March 8, May 26 and September 24) to assist the agency in the implementation of the Virginia Innovations in Pollution Prevention (VIP2) strategy.
- < **DEQ Small Business Assistance Program (SBAP)**, a non-regulatory technical assistance program for small businesses. In 1999, OPP and the SBAP jointly mailed packets of pollution prevention and compliance assistance information directly to printers and dry cleaners (www.deq.state.va.us/osba/smallbiz.html).
- < **Elizabeth River Project (ERP)**, an independent, non-profit partnership of business, government, scientific and citizen interests working together to restore environmental quality in the Elizabeth River watershed. OPP conducted three pollution prevention assessments in the Norfolk area with ERP staff (mailhost.infi.net/~erp).
- < **Manufacturing Technology Center (MTC)**, a non-profit organization dedicated to assisting manufacturers in southwestern Virginia become more competitive and profitable located at the Wytheville Community College. MTC offers on-site pollution prevention technical assistance and training. OPP co-sponsored workshops with MTC in 1999.
- < **Virginia's Philpott Manufacturing Extension Partnership (VPMEP)**, a full-service manufacturing extension program serving all of Virginia (www.vpmep.org). In 1999, OPP continued its co-sponsorship with VPMEP on the Virginia Environmental Services Network, a website with information on over 550 public and private sector environmental service organizations (www.vesn.org).
- < **Virginia Environmental Business Council**, an organization developed in 1998 to enhance business and job growth of established and emerging environmental companies in Virginia, whose members serve on several of the VIP2 workgroups and the Pollution Prevention Advisory Committee (www.vebc.org).
- < **Waste Reduction Resource Center (WRRC)**, located in Raleigh, North Carolina, which provides technical pollution prevention and training to service providers located in EPA Regions III and IV. OPP staff serve in an advisory capacity to the WRRC in the development of its on-line clearinghouse "P2 Infohouse", a resource of more than 13,000 technical pollution prevention documents and selected core references for many industrial sectors (wrrc.p2pays.org).
- < **National Industrial Competitiveness through Energy, Environment and Economics (NICE³) Project**: DEQ, through a competitive grant award, has entered into a partnership with the U.S. Department of Energy, the Environmental Protection Agency, and the Reynolds Metals Company to demonstrate technological changes through new processes and equipment that will significantly reduce the generation of high volume wastes in industry and conserve energy and energy-intensive feedstocks.

This pollution prevention effort focuses on a reduction in chlorine use in the primary aluminum industry. Initial demonstration processes indicate a reduction in chlorine use and waste generation. Final results are expected in the spring of 2000.

Environmental Education



Education and training about pollution prevention is provided to teachers and community education through the Environmental Education Leadership Project (funded by a grant from the Virginia Litter Prevention and Recycling Fund). The central theme of the program is pollution prevention, and it is designed to help strengthen community-based environmental education programs and outreach efforts. In 1999, three major activities were accomplished: 1) distribution of 1,000 copies of a science-based, interdisciplinary curriculum, *Pollution Solutions: Activities for Virginia Teachers*, correlated to the Virginia Standards of Learning for elementary grades; 2) five leadership workshops for 100 educators and local litter prevention and recycling coordinators from 42 local governments were conducted; and 3) 6 presentations or specialized programs for 280 people were conducted.

The two-day leadership training sessions provided instruction on science process skills, curriculum integration and environmental education training techniques, as well as a full array of free and low cost educational materials on pollution prevention, recycling and litter prevention. Attendees also received teaching kits with instructional “props” to conduct several classroom presentations. These education “leaders” reached more than 50,000 students with hands-on science lessons during 1,500 classroom presentations. Several local programs have replicated these training workshops to train their volunteer educators.

DEQ’s web site has been expanded to include pollution prevention information for students on its page for children, the “Kid’s CAVE” (Caring About Virginia’s Environment). The Environmental Education Resources Directory: A Guide to Informational and Educational Resources was updated to include appropriate resources and formatted for the Internet.

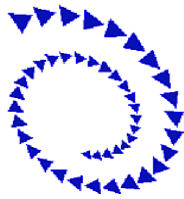
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Future Activities

In the late fall of 1999, the Office of Pollution Prevention hired seven new full-time positions, bringing its staffing up to ten full-time and three part-time positions. The additional staff will facilitate full implementation of all of the elements of the Virginia Innovations in Pollution Prevention (VIP2) initiative. Primary activities in the year 2000 include:

- < A significantly increased level of on-site pollution prevention and environmental management systems assistance at facilities throughout Virginia;
- < Enhancement of the program's web-based resources, including informational materials and links to other programs;
- < Solid waste reduction assistance to businesses, state agencies and localities;
- < Formation of a pollution prevention partnership with Virginia's federal facilities to share information and pursue joint projects;
- < Development of a network to facilitate business-to-business mentoring network;
- < Development of guidance for using existing financial incentives for pollution prevention activities;
- < Assist EPA Region III in the organization of the 2000 Mid-Atlantic Pollution Prevention Conference on pollution prevention in the health care industry in January in Richmond;
- < Assist in the organization of the Environment Virginia 2000 conference on "Beyond Compliance to Environmental Excellence" at the Virginia Military Institute in April;
- < Implementation of the Virginia environmental excellence program to encourage the implementation of environmental management systems and pollution prevention throughout Virginia; and,
- < Initiatives to increase the knowledge and availability of innovative pollution prevention environmental technologies.

**For more information,
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